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prostrate forms—it was that of Richard. He turned up the face—great God! it was the face of a livid corpse! A smothered groan burst from James: he rushed towards the next—Matt Kavanagh was dead also, quite dead and stiff! James and his friends looked at each other solemnly, and without speaking a word. They turned their glance simultaneously to the place where Gerald was lying. They moved or rather tottered to the spot. There he lay, with Alice in a swoon beside him, his eyes glazed, the skin of his face tightened over his nose and cheek-bones, his lips covered with viscid froth, and his beautiful brown hair tossed backwards from his damp forehead, glistening in a streak of sunshine which came full upon it from the window. “He is alive still!” they all three exclaimed: “he may yet be saved!”

One of them ran to the window and made a sign to the neighbours to come in. The room was soon full of horrified spectators.

They parted Alice from her dying brother, and both were brought out into the open air as quickly as possible.

Amidst the cries and lamentations of the bystanders Alice recovered. She sat for a while on the grass, trying to recall her scattered senses. The sight of Gerald lying near her, as the crowd opened to admit the air to his face with a freer freshness, brought the whole terrible truth to her mind. She rose with difficulty, but, gathering strength with recollection, she succeeded in breaking from the woman who had her in charge, and in a moment the head of Gerald was pillowed upon her bosom.

The soft cooling breeze had restored the unfortunate boy to a momentary consciousness. He was barely able to turn his head towards Alice in recognition of their presence. A faint pleasure was expressed in his glassy eyes as he did so.

“Won’t you speak to me, Gerald? Won’t you speak to your own Alley?”

The boy shook with a convulsive shudder, but could not utter a syllable.

“Don’t die, dear Gerald; don’t leave poor Alley all alone in the world! Oh, oh, oh!” said the little girl in the very agony of childish despair, “he’ll never be the same again—he’ll never speak to me again!”

The boy made an effort to bring Alice’s ear to his clammy lips; she strove to hear the almost inarticulate whisper which hovered upon them.

“Is—uncle James—here?” gasped the dying lad; “tell him—I—couldn’t—help it! Oh! Alley! oh!”

Gradually the groan, extorted by the last pang of dissolution, died away, and with it the spirit of poor Gerald Kavanagh.

Alice perceived what had happened as soon as any of the bystanders, but high and shrill her scream mounted over the wailing which arose from the others, ere she once more sank down in the swoon which the excess of her anguish had so mercifully caused.

On the following day a coroner’s inquest was held upon the bodies of the three sons of Peter Kavanagh, in a public-house not far distant from the scene of this fatal debauch. A surmise had been afloat that poison had somehow or other been the cause of their death, and an examination of one of the bodies was considered needful. I will not shock my readers with a description of the fearful chamber where this most loathsome operation was performed. The result was a verdict to the effect that the three Kavanaghs had died “from the excessive use of ardent spirits.”

I commenced by saying I feared that this narrative might fail in pointing a moral. It has a moral—a moral to selfish and ill-judging parents, and equally ill-judging societies, who lay the flattering unction to their souls that coercion will have a better effect than a fair and consistent example. Verily, the Spartan nobles, who exhibited the drunken slave before their children, and then placed the wine-cup within their reach, had a better knowledge of human nature than the Irish father who would exorcise the demon of alcohol out of his children by pledges of abstinence, or threats of punishment, while, in the security of his own experience, he feels he can temperately enjoy the luxury of spirituous drink.\* R. M.

\* From the Londonderry Standard.

## SAP IN VEGETABLES.

### SECOND AND CONCLUDING ARTICLE.

WE endeavoured in our last article to describe the principal circumstances of interest with respect to the ascending or un-elaborated sap. We have found that it is derived from the aliment which consists of water and carbonic acid; that it is composed of a solution of sugar and gum in water; that it ascends in the ordinary trees of this country through the wood, which is situated between the bark and pith; that the causes which elevate it are partly a vital attraction or suction exercised by the buds, and partly an endosmose, by which, in consequence of its superior density, it draws in its aliment through the spongy extremities of the roots; that its use is not only to furnish materials for the descending or elaborated sap, but by developing the fleshy part of plants to cause the growth of stems in length and roots in thickness. We shall now proceed to show the origin, the course, the composition, and the uses of the descending or elaborated sap.

The elaborated sap is formed out of the ascending sap. The place where this change takes place is in the leaves and green parts of vegetables; it is generally in the spring season that the ascending sap pushes out the buds into branches, and develops the little scales which had surrounded these organs into leaves; but when these leaves are formed, the sap continues to ascend into them, and there undergoes those alterations from whence the elaborated sap results. Now, these alterations consist in the getting rid of all superfluous water and carbonic acid, which, originally absorbed as aliment, had not undergone the conversion into gum and sugar during the ascent of the sap; secondly, in the acquisition of additional nutriment from the atmosphere; and, thirdly, in the conversion of these substances into a variety of new compounds.

Let us examine each of those changes to which the ascending sap is subjected, in succession; and, first, with respect to the disengagement of superfluous water and carbonic acid, every one must have observed drops of water collected on the leaves of cabbages and other vegetables, when examined early in the morning. These are commonly supposed to be dew-drops, but are truly in great part the result of a kind of perspiration which is always taking place from the surface of plants. That this is the case, can be proved by covering a cabbage-plant with a bell-glass, and placing it in a room sufficiently heated to prevent the deposition of dew, when drops of water will be found equally to collect upon its leaves. These drops are not observed during the day, because the temperature is then commonly so high as to evaporate them as fast as they are transuded; but the fact is, that plants actually give off much more water during the day than night. The escape of carbonic acid is not so easily detected as that of water; it can, however, be proved, through the resources of chemistry. Unlike water, which is liberated both night and day, and indeed in greatest quantity during the latter period of time, carbonic acid is found to be disengaged during the night only. As long as plants are exposed to the light of the sun, their green parts liberate none of this gas.

We have mentioned that when the ascending sap arrives into the leaves, it not only throws off superfluous water and carbonic acid, but likewise derives an additional quantity of nutriment from the atmosphere. The presence of light is necessary for this latter circumstance to take place. The nutriment which, under the influence of sunlight, it acquires from this source, is a substance named “carbon;” this substance is a constituent of carbonic acid, which is indeed composed of carbon and oxygen; carbonic acid is contained in the atmosphere in the proportion of one part in a thousand; the green parts of plants absorb it, and under the influence of light decompose it; the carbon is retained, but the oxygen is again liberated. We now may perceive the reason of the fact mentioned in the preceding paragraph: plants give out no carbonic acid during the day, because the superfluous carbonic acid of the ascending sap becomes decomposed under the influence of light, in the same way as that which has been absorbed from the atmosphere.

A great many compound products are obtained from the vegetable kingdom. We need merely recall to the reader’s recollection starch, resin, camphor, bland and aromatic oils, bitter principles, colouring matters, the acids of the grape, the lemon, and the apple, &c. to assure him of this truth. All these different substances form themselves out of the sugar and gum of the ascending sap, together with the carbon absorbed under the influence of light.

Fine connexions are apt to plunge you into a sea of extravagance, and then not to throw you a rope to save you from drowning.

When the ascending sap has parted with its superfluous water and carbonic acid, when under the influence of light it has absorbed carbon from the atmosphere, and when its constituents arrange themselves anew, so as to produce some or all of the substances above enumerated, its name as well as its functions cease: it has now become the descending or elaborated sap.

Let us now inquire the course which the descending sap pursues. We have stated in our last article, that if a ligature be twisted tightly round a branch of one of our common trees, the portion immediately above the ligature will become swollen, while that beneath it will retain its former thickness. If instead of a ligature we remove a circular ring of bark, the same phenomenon will take place: the part above this annular incision will swell out on every side. From this experiment we derive several important inductions. We learn from hence that this kind of sap descends, and moreover that the channel which conveys it is the *bark*.

Having ascertained the course which the elaborated sap pursues, let us now turn our attention to its *composition*. This is found to vary in different plants: thus in some, bitter principles are the chief constituents; in others, aromatic substances; in others it is principally resinous; but whatever may be the principal components, they may always be divided into two groups—namely, those which are subservient to the growth of the vegetable, and those which, becoming deposited in the different organs, confer on them those properties which entitle them to be employed as articles of medicine or aliment for animals, and by means of which different plants are in this respect distinguished from each other. The portion of the descending sap which serves for the growth of the vegetable, exudes in ordinary trees between the bark and the wood, forming a glutinous layer which separates these organs, and is the cause of the facility with which in autumn the bark can be detached from the stem: this portion is called *camhium*. In palms, and other trees of warm climates, there is no bark, and in such vegetables the nutritive part of the descending sap passes down through the centre of the stem.

The portion of elaborated sap which becomes deposited in the organs, and which varies more or less in every plant, is called the proper juice: proper vessels is the name given to the reservoirs which contain the proper juices; and according to the nature of their contents, the proper vessels are called milk-vessels, turpentine-vessels, vesicles of essential oil, &c.

In the foregoing paragraphs we have somewhat anticipated the uses of the descending sap: we have found that one portion of it is destined for the nutrition of the vegetable. Now, the same means which revealed to us the uses of the ascending sap, will also tell us how far the elaborated sap is concerned in vegetable nutrition. In the dark no sap is elaborated, and no vegetable fibre is developed. Are we not therefore justified in supposing that vegetable fibre is formed out of this elaborated sap? Again, let our readers call to their remembrance the experiment of tying a ligature around a branch: in that experiment not only does a considerable swelling take place above the ligature, but from this swollen portion cereal roots frequently protrude. These facts afford us a clue to the uses of the descending sap, for by developing vegetable fibre, it increases the thickness of the stem and the length of the roots, just as the ascending sap, by developing vegetable flesh, lengthens the stem, and enlarges the root in diameter.

T. A.

### SONNET ABOUT A NOSE.

'Tis very odd that poets should suppose  
There is no poetry about a nose,  
When plain as is the nose upon your face,  
A noseless face would lack poetic grace.  
Noses have sympathy; a lover knows  
Noses are always "*touched*," when lips are kissing;  
And who would care to kiss, where nose was missing?  
Why, what would be the fragrance of a rose,  
And where would be our mortal means of telling  
Whether a vile or wholesome odour flows  
Around us, if we owned no sense of smelling?  
I know a nose, a nose no other knows,  
'Neath starry eyes, o'er ruby lips it grows;  
Beauty is in its form, and music in its blows!

### A CHAPTER ON MEN,

BY A CUR.

TO THE EDITOR OF THE IRISH PENNY JOURNAL.

SIR—In the 12th number of your Journal you have given insertion to a paper tending to involve our ancient and honourable race in considerable disrepute—I allude to an article entitled "*A Chapter on Curs, by a Man*." Every story will on investigation be found to have two sides: you have given publication to the one, and surely you will not, in justice, refuse to give your readers an opportunity of judging of the other.

I remain, Sir, your faithful servant,

AN AGED CUR.

By what means I have acquired the facility of expressing my thoughts upon paper, it is not my intention to divulge. It is true that I have made an important discovery—that I have gained possession of a secret which mankind would give worlds to possess; but I owe too little gratitude to any member of the human race to be induced to part with it. I am old: nearly fifteen winters have passed over my head since I first drew breath, and in the course of nature death cannot be far distant. My discovery shall shortly perish with me; and the same ditch or dunghill shall witness the dissolution of both.

Of my parentage I can record but little, as I remember nothing whatever of my father, and my unfortunate mother was hanged shortly after having given me birth. Alas! my recollections of her are tinged with any but pleasurable emotions, for to her I owe much of the misery with which my career has been chequered. Had she conducted herself with prudence, and been satisfied to have selected a mate from amongst the many dogs of her own degree who solicited her paw, my existence might have been passed in happy, because unnoticed obscurity. But no: stern destiny decreed that it should be otherwise, and had marked me for misfortune ere even I was born. Let not the reader start to hear me mention *destiny*: if he object to my opinions on this subject, he has a wide field open to him for reply in the pages of the daily press, which, CUR though I be, I am, by virtue of the discovery already alluded to, in the habit of reading; and he may rely upon it I am prepared to defend every position I advance. Why should I not mention destiny? I am a rigid fatalist, and well for me that I am. What else would enable me to bear up against the scoff and scorn of man? What else would steel my feelings against the blows of stones, thrown by the hands of such cowardly insensible men as he who published the philippic against our race, which has called forth this reply? What else would console me, when the staff of the churlish boor comes across my back, or when the urchin-rout attach the terrible *kettle* to my trembling tail? What supports me under such heart-rending circumstances, save the feeling that all is fixed—that such is my sad *destiny*, against which my barking or my struggling would avail me nought? But I digress—it is facts and not feelings that it is my province to record.

My ambitious parent, infatuated with the admiration and assiduity of her numerous suitors, despised them all, and falling a victim to her vanity, suffered herself to be seduced from the paths of propriety by a designing young pointer, who threw himself in her way, and employed every artifice, until at length he induced her to elope with him from her master's comfortable farm-yard. For a while the guilty pair contrived to escape detection. My unhappy mother took up her abode under a hay-stack in the neighbourhood, and for a week or two was well and kindly treated by her gay and youthful lover, who regularly saved a portion of his daily meals for her use. After a little, however, meeting with a new and more beautiful object on whom to bestow his worthless affections, he abandoned my mother to her own resources, and from that period she saw him no more. Dreading to return to the home she had left, and being pressed with hunger, she was compelled to steal for her subsistence, and the poultry in the neighbouring homesteads visibly diminished in number; while, to crown all, my parent was brought to the straw, and became the mother of five little ones, including myself. The additional drag which the suckling of so large a family produced, increased my progenitor's rapacity four-fold, and the indulgence of it caused her destruction. One day as she lay beside us, half famished, and ready almost to devour her own offspring, a little pig chanced to pass by. My mother belonged to a fierce breed, that called the bull-terrier, and, accordingly, stimulated by the gnawings of hunger, she sprang upon the little pig, and